| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/913,463 | 08/15/2001 | Daniel G Waddington | 36-1489 | 2416 |

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| EXAMINER |
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| TANG, KENNETH |

| ART UNIT | PAPER NUMBER |
|---|---|
| 2195 | |

DATE MAILED: 07/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | Application No. | Applicant(s) |
|---|---|---|
| **Office Action Summary** | 09/913,463 | WADDINGTON, DANIEL G |
| | Examiner | Art Unit | |
| | Kenneth Tang | 2195 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

1)☒ Responsive to communication(s) filed on <u>21 April 2005</u>.

2a)☒ This action is **FINAL**.     2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

4)☒ Claim(s) <u>17-33</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>17-33</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

## Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *  c)☐ None of:

     1.☐ Certified copies of the priority documents have been received.

     2.☐ Certified copies of the priority documents have been received in Application No. _____.

     3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>4/21/05</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

## DETAILED ACTION

1.       This action is in response to the Amendment filed on 4/21/05.  Applicant's arguments

have been fully considered but are not found to be persuasive.  Applicant's amendments have

prompted new grounds of rejections.

2.       Claims 1-16 have been cancelled and claims 17-33 have been added.  Claims 17-33 are

now presented for examination.

### *Claim Objections*

3.       Claims 17, 25, and 31 are objected to because of the following informalities:

   a.       In claim 17, "fist" (line 11) needs to be changed to "first".

   b.       Appropriate correction is required.

   c.       In claim 25, "at the end of a quantum of CPU access time;" (line 7) is not a step.

The semicolon needs to be changed to a comma.

   d.       In claim 31, "reserved" (line 2) should be changed to "reserve".

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or
any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and
requirements of this title.

4.       Claims 17-33 are rejected under 35 U.S.C. 101 based on the theory that the claim is

directed to neither a "process" nor a "machine," but rather embraces or overlaps two different

statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the

statutory classes of invention in the alternative only. Id. at 1551 (see MPEP 2173.05(p) - Claim

Directed to Product-By- Process or Product and Process).


## *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.


5.      As to claims 17-33, a single claim which claims both an apparatus and the method steps

of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. In Ex parte Lyell, 17

USPQ2d 1548 (Bd. Pat. App. & Inter. 1990), a claim directed to an automatic transmission

workstand and the method steps of using it was held to be ambiguous and properly rejected

under 35 U.S.C. 112, second paragraph (see MPEP 2173.05(p) - Claim Directed to Product-By-

Process or Product and Process).

6.      Claims 17-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention:

  e.      In claim 17, "a resource" (line 8) is indefinite because it is not made explicitly

  clear in the claim language whether this refers to "a resource" (line 6) or if a new

  resource is being introduced.

  f.      Claims 32 and 33 are rejected for similar reasons as claim 17.


## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

7.      **Claims 17-21, 27-28, and 32-33 are rejected under 35 U.S.C. 103(a) as being**

**unpatentable over Baugher et al. (hereinafter Baugher) (US 5,701,465) in view of Jones et**

**al. (hereinafter Jones) (US 5,701,465).**

8.      As to claim 17, Baugher teaches a method of administering resource utilization in a

computer, the computer comprising:

a means to initiate resource specific reservation processing; and at least one reservation

means having at least one method for making reservations for access to a resource of the

computer (resource reservation system), the method comprising *(col. 9, lines 66-67 through col.*

*10, lines 1-8)*:

running a first process to make a reservation for access to a resource in dependence on a

resource requirement communication from an application process said application process

calling a scheduling method of the scheduling means, said scheduling method taking a hardware

independent first resource access requirement definition as a parameter and calling a reservation

method of the reservation means to make a reservation for said application process using a

hardware dependent second resource access requirement definition as a parameter (service

parameters of the resource reservation system) *(col. 2, lines 11-16, col. 9, lines 66-67 through*

*col. 10, lines 1-8, col. 6, lines 23-36)*;

running a second process to grant requests for access to said resource from said
application process in dependence on said reservation, comprising running a resource specific
scheduling process to grant access (to data in the reservation table) to a resource in dependence
on the reservation made by the reservation means initiated by said scheduling means in said first
process prior to said second process *(col. 3, lines 22-25, col. 6, lines 61-64, col. 9, lines 66-67
through col. 10, lines 1-8)*; and

utilizing said resource for the purposes of said application process (available for
reservation by an Ethernet adapter, etc.) *(col. 9, lines 66-67 through col. 10, lines 1-8)*.

Baugher fails to explicitly teach a scheduling means for the reservation system.
However, Jones teaches using a scheduler for a reservation system for a plurality of different
resources to provide the benefit of resource management *(col. 5, lines 59-67 through col. 6, lines
1-5, col. 1, lines 31-65)*. It would have been obvious to one of ordinary skill in the art at the time
the invention was made to combine the feature of a scheduling means for a reservation system to
the existing reservation system of Baugher in order to obtain the benefit described above.


9.    As to claim 18, Baugher teaches wherein said scheduling means translates the hardware
independent first resource access requirement definition into the hardware dependent second
resource access requirement definition *(col. 6, lines 66-67 through col. 7, lines 1-8, col. 9, lines
66-67 through col. 10, lines 1-8)*.


10.    As to claim 19, Baugher teaches wherein said scheduling means is supported by a
platform (operating system within the computer) and said scheduling means translates said

hardware independent resource access request definition to a second resource access request
definition dependent on the properties of said platform *(col. 6, lines 66-67 through col. 7, lines 1-8, col. 9, lines 66-67 through col. 10, lines 1-8)*.

11.    As to claim 20, Baugher teaches wherein said a second resource access request definition
has a form suitable for use by at least one of the following:

 a CPU reservation component of the computer; and a memory reservation component of
the computer (reservation in a computer system) *(col. 10, lines 49-67-col. 11, lines 1-21)*.

12.    As to claim 21, Baugher teaches wherein said resource comprises a CPU of the computer,
and said scheduling means is arranged to reserve access to CPU time for said application process
using said second resource access requirement definition in advance of said step of granting a
request for access to the CPU *(col. 9, lines 66-67 through col. 10, lines 1-8, col. 3, lines 22-25,
col. 6, lines 61-64, col. 9, lines 66-67 through col. 10, lines 1-8)*.

13.    As to claim 27, Baugher teaches wherein said memory reservation component comprises
a mass storage device reservation component of the computer *(Fig. 2, 300 or 320 or 330)*.

14.    As to claim 28, it is rejected for the same reasons as stated in the rejections of claims 21
and 27.

15.    As to claims 32-33, they are rejected for the same reasons as stated in the rejection of

claim 17.

16.    **Claims 22-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over**

**Baugher et al. (hereinafter Baugher) (US 5,701,465) in view of Jones et al. (hereinafter**

**Jones) (US 6,584,489 B1), and further in view of Papworth et al. (hereinafter Papworth)**

**(US 5,778,245).**

17.    As to claim 22, Baugher and Jones fail to explicitly teach wherein said hardware

dependent second resource access requirement definition comprises a one-dimensional

reservation request pattern which is merged with a one-dimensional CPU access control pattern,

representing empty CPU access time slots and reserved CPU access time slots, without

disturbing either the reservation request pattern or the reserved CPU access time slots in the

reservation request pattern. However, Papworth teaches generating a one-dimensional array

which holds reservation information in the data array and merges information into a reservation

station, representing empty CPU access time slots (not reserved) and reserved CPU time slots

(col. 14, lines 41-67, col. 16, lines 2-7, col. 5, lines 8-11). By definition, reserving (the CPU

access control pattern, etc.) keeps secure (does not disturb) the CPU access control pattern. It

would have been obvious to one of ordinary skill in the art at the time the invention was made to

include the above feature of Papworth to the existing invention of Baugher and Jones because it

would increase its resource use efficiency *(col. 2, lines 31-50)*.

18.     As to claim 23, Papworth teaches wherein said merging step comprises relocating a non-empty time slot element of the reservation request pattern or the CPU access control pattern such that the  patterns can be merged without any reserved CPU access time slot elements being deleted or overwritten *(e.g., col. 14, lines 41-67, col. 16, lines 2-7, col. 5, lines 8-11)*.

19.     As to claim 24, Papworth teaches wherein the relocated non-empty time slot element is relocated by an amount defined in said time slot element *(see claims 16 and 17)*.

20.     As to claim 25, it is rejected for the same reasons as stated in the rejection of claim 22.  In addition, Papworth teaches a quantum of CPU access time (time period) and at the end of a quantum of CPU access time (time period):

    granting access to any pending processes having a priority greater than a predetermined level *(col. 8, lines 54-58, col. 33, lines 1-14)*; and then

    if the next pattern element is empty then granting access to a pending process (first valid entry or the next valid entry) meeting a predetermined prioritization criterion else granting access to a process identified in the pattern element *(col. 8, lines 54-58, col. 33, lines 1-14)*.

21.     As to claim 26, Papworth teaches wherein pending processes populate queues having different priorities and access is granted to the process identified in the pattern element when there is not a populated process queue having a higher priority than the queue in which said process is present *(col. 16, lines 1-15, col. 33, liens 1-14)*.

22. **Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baugher et al. (hereinafter Baugher) (US 5,701,465) in view of Jones et al. (hereinafter Jones) (US 6,584,489 B1) in view of Nakahara et al. (hereinafter Nakahara) (US 6,253,225 B1).**

23. As to claim 29, Baugher teaches wherein when said scheduler makes a reservation one or more resource tokens are allocated to said application process in dependence on the second resource access requirement definition, and wherein in said second process said step of granting a request for access to said resource, the step of running a resource specific scheduling process to grant access to a resource in dependence on the reservation made by the reservation means comprises *(col. 3, lines 22-25, col. 6, lines 61-64, col. 9, lines 66-67 through col. 10, lines 1-8)*:

storing requests for access to a mass storage device from application processes *(Fig. 2, 300 or 320 or 330)*;

if no application process has been allocated, said identified resource token then passes on to a mass storage device driver process the stored request for access from an application process selected on the basis of a predetermined prioritization criterion, and otherwise: said identified resource token then passes on to a mass storage device driver process a stored request for access from an application process to which said identified resource token was allocated *(col. 5, lines 1-15, col. 6, lines 66-67 through col. 7, lines 1-8, col. 9, lines 66-67 through col. 10, lines 1-8, Fig. 4)*.

24.     Baugher fails to explicitly teach generating randomly a resource token identifier.

However, Nakahara teaches generating a random number value to for creating or making the

identification information *(col. 19, lines 10-24)*. It would have been obvious to one of ordinary

skill in the art at the time the invention was made to combine Nakahara's feature of generating

substantially randomly a resource token identifier to Baugher's resource utilization system

because having identifiers of a process and knowing the identifiers of the process is needed in

order to deallocate the resource occupied by the process *(col. 2, lines 62-64)*.

25.     **Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baugher et**

**al. (hereinafter Baugher) (US 5,701,465) in view of Jones et al. (hereinafter Jones) (US**

**6,584,489 B1) in view of Baugher et al. (hereinafter Baugher2) (US 5,640,595).**

26.     As to claim 30, Baugher teaches wherein when said scheduling means makes a

reservation in said first process, a weighting function associated with the application process is

determined and in said second process, in said step of granting a request for access to the

resource, the step of running a resource specific scheduling process to grant access to a resource

in dependence on the reservation made by the reservation means comprises performing the steps

of *(col. 3, lines 22-25, col. 6, lines 61-64, col. 9, lines 66-67 through col. 10, lines 1-8)*:

        (i) storing requests for access to a mass storage device from application processes *(Fig. 2,*

*300 or 320 or 330)*;

(ii) passing on to a mass storage device driver process the stored request for access from

the selected application process, or passing on to a mass storage device driver process a stored

request for access from an application process selected on the basis of a predetermined

prioritisation criterion *(col. 5, lines 1-15, col. 6, lines 66-67 through col. 7, lines 1-8, col. 9, lines*

*66-67 through col. 10, lines 1-8, Fig. 4).*

Baugher fails to explicitly teach using a stochastic process by selecting an application

process with a probability determined by the weighting associated with the application process.

However, Baugher2 teaches using a stochastic (probability) process parameters for the benefit of

determining quality of service *(col. 7, lines 34-46).* It would have been obvious to one of

ordinary skill in the art at the time the invention was made to combine the feature of using a

stochastic processes to Baugher's resource utilization reservation system to obtain the benefit of

determining the quality of service *(col. 7, lines 34-46).*

27.     **Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Baugher et**

**al. (hereinafter Baugher) (US 5,701,465) in view of Jones et al. (hereinafter Jones) (US**

**6,584,489 B1) in view of Bonomi et al. (hereinafter Bonomi) (US 6,292,492 B1).**

As to claim 31, Baugher teaches wherein said memory is comprises random access

memory (Main Memory 120, Fig. 1, etc.) and in advance of said step of granting a request for

access to said random access memory *(col. 2, lines 11-16, col. 9, lines 66-67 through col. 10,*

*lines 1-8).* Baugher fails to explicitly teach reserving minimum memory space. However,

Bonomi teaches reserving minimum memory space *(see Abstract)*. It would have been obvious

to one of ordinary skill in the art at the time the invention was made to include the feature of

reserving minimum memory space to the existing system of Baugher and Jones because it would

maximize memory space *(see Abstract)*.

### *Response to Arguments*

28.     During patent examination, the pending claims must be "given their broadest reasonable

interpretation consistent with the specification." *In re Hyatt*, 211 F.3d 1367, 1372, 54 USPQ2d

1664, 1667 (Fed. Cir. 2000). Applicant always has the opportunity to amend the claims during

prosecution, and broad interpretation by the examiner reduces the possibility that the claim, once

issued, will be interpreted more broadly than is justified. *In re Prater*, 415 F.2d 1393, 1404-05,

162 USPQ 541, 550-51 (CCPA 1969).

29.     In claim 17, the recitation "a method of administering resource utilization in a computer,

the computer comprising: a scheduling means having at least one method for processing

reservation requests for a plurality of differing resources of the computer, wherein said

scheduling means is arranged to initiate resource specific reservation processing; and at least one

reservation means having at least one method for making reservations for access to a resource of

the computer, the method comprising:" has not been given patentable weight because the

recitation occurs in the preamble. A preamble is generally not accorded any patentable weight

where it merely recites the purpose of a process or the intended use of a structure, and where the

body of the claim does not depend on the preamble for completeness but, instead, the process

steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190

USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA

1951).

30.    Applicant argues on pages 18-21 of the Remarks that the citations made by the Examiner

do not support the teachings of Baugher et al. (US 5,640,595). In response, the primary

reference used in the rejection is Baugher et al. (US 5,701,465) and NOT Baugher et al. (US

5,640,595). It would be improper to assume that the primary reference would be Bauger '595

because the rejection of original claim 14 used it as a secondary reference. Applicant has

amended and added new claims. The Examiner has made the rejection clear in the newly added

and amended claims. New grounds of rejections have also been made.

*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this

final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Kenneth Tang whose telephone number is (571) 272-3772. The

examiner can normally be reached on 8:30AM - 6:00PM, Every other Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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